

Before The
Federal Communications Commission
Washington D.C., 20554

September 14, 1998

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of the Petition of:)
)
Small Aircraft Manufacturers)
Association (SAMA))
)
For Amendment of Part 87 of the)
Commission's Rules to Authorize)
Channels in the 136-137 MHz)
allocation for digital Flight Information
Services (FIS).

PETITION FOR RULEMAKING

Pursuant to Section 1.401 of the Commission's Rules,¹ the Small Aircraft Manufacturers Association (SAMA) hereby petitions the Commission to revise Part 87 to permit the timely implementation of FAA's Flight Information Services (FIS) program in the frequency band 136-137 MHz by allowing frequency and phase modulated digital data transmissions in this band.

I. Summary

In 1990, the Commission issued a Report and Order amending Parts 2 and 87 of the Commission's Rules, 47 C.F.R. Parts 2 and 87, to permit stations in the aviation services to use certain frequencies in the 136-137 MHz band.² This action was taken to conform the Commission's Rules with the Final Acts of the 1979 World Administrative Radio Conference (1979 WARC), the Final Acts of the 1987 World Administrative Radio Conference for the Mobile Services (WARC Mod-87), and to address two petitions (one filed by Aeronautical Radio Inc, ARINC, and the other by American Petroleum Institute, API).

The Commission amended Parts 2 and 87 of the Rules to make thirty-five channels in the 136-137 MHz band available for assignment to aeronautical

¹ 47 C.F.R. Section 1.401

² Federal Communications Commission FCC 90-236, Adopted by the Commission June 14, 1990, Released July 5, 1990, GEN. Docket No. 89-295 ("FCC 90-236").

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stations.³ Of these, fifteen channels were “allocated for general aviation uses such as AWOS, ATIS, control tower and advisory communications.”⁴ The FAA was authorized to use these channels on a shared basis for such general aviation purposes. In addition, five channels were temporarily held in reserve for future general aviation services.⁵

On May 1, 1998, FAA Administrator Jane Garvey signed the FAA’s Airborne Flight Information Services Policy Statement (a copy is attached). “This policy calls for government/private industry partnership in which the government provides basic weather products and access to radio spectrum to selected qualified vendors who provide FIS data link services to end users.”⁶ On August 28, 1998, the FAA issued a Request for Information (RFI) for Flight Information Services (FIS) Data Link Communication Services. This RFI is part of the FAA’s process of awarding radio spectrum to FIS providers. **The FAA plans to award this spectrum to such providers by December 31, 1998, with services planned to commence in 1999.**

SAMA is one of the members of the General Aviation Action Plan Coalition (GAAPC), which Coalition includes all of the general aviation trade associations. The GAAPC formally requested the FAA to adopt this FIS policy on April 30, 1997. SAMA, working closely with the FAA’s Spectrum Management Office to implement the FAA’s FIS Policy, is hereby petitioning the Commission to amend Part 87 in order to permit FAA to assign four 25 KHz channels in the 136-137 band to qualified FIS providers.

Specifically, SAMA is petitioning the FCC to amend Section 87.131, Power and emissions, to modify the “Aeronautical Advisory” Authorized Emissions classification to allow not only A3E (double sideband amplitude modulation), but also to allow F1D and G1D (frequency and phase modulated digital) in order to permit digital data transmissions for FIS on the frequencies in this band that the FAA selects to provide this service (and to make such other consequent changes as are necessary).

The FAA’s Spectrum Management Office supports this petition.

II. History of 136 -137 MHz Band Allocation

On November 21, 1988, Aeronautical Radio Inc. petitioned the Commission for a rulemaking to establish appropriate aviation rules in Part 87 to

³ Id. at 5, 6.

⁴ Id.

⁵ Id.

⁶ Letter from Ronald E. Morgan, Acting Association Administrator for Air Traffic Services, June 16, 1998.)

permit aeronautical communication in the 136-137 MHz band, which had previously been allocated for various space to earth communications.⁷ On June 28, 1989, the Commission released a NPRM proposing such an amendment. Other petitions and various comments and replies were filed in 1989 and 1990, and the Commission released its Report and Order on July 5, 1990 (Order).

This Order provides "fifteen channels for general aviation uses such as AWOS, ATIS... and advisory communications."⁸ "AWOS" refers to automated weather observation systems, which are systems that automatically observe the weather (without a human weather observer) and then continuously broadcast computer-generated voice reports of weather variables (ceiling, visibility, wind direction and speed, temperature, etc.). "ATIS" refers to automatic terminal information systems, which broadcast tape recorded voice transmissions of weather information (the same weather variables as are broadcast by AWOS) and airport operations information (approaches and runways in use, etc.). These are two typical types of "advisory communications" in use today. Digital FIS broadcast is another type of advisory communication that the FAA is now preparing to make available to pilots to supplement voice advisory communications.

The frequencies in the 136-137 MHz band are not currently being used. In part this is because very few general aviation aircraft have voice radios that can tune to this band. Most general aviation aircraft have 720 channel transceivers that tune up to 136 MHz; only the newest radios are 760 channel transceivers that also tune the 40 channels in the 136-137 band. Aircraft desiring to receive FIS broadcasts would have to purchase a receiver only, tuned to the frequencies allocated by the FCC and assigned by the FAA for this purpose.

III. Flight Information Services Spectrum Requirements

"Flight Information Services (FIS) are defined as the noncontrol, advisory information needed by pilots to operate more safely and efficiently in the National Airspace System (NAS) and in international airspace."⁹ FIS includes broadcasts of weather and other advisory information that are identical in purpose to AWOS and ATIS weather reports, except instead of voice transmission, they use data transmission. This data is then displayed to the flight crew on a display, depicting either textual or graphical information. For example, text of weather observations identical to the type of information provided over AWOS by voice is one type of weather FIS. A graphical representation of weather hazard areas, such as thunderstorms, is another type

⁷ FCC 90-236 at 1.

⁸ Id. at 5.

⁹ Airborne Flight Information Services Policy Statement, at 1.

of weather FIS. Notices to Airmen (NOTAMS) are another type of FIS, as are the status of special use airspace (SUA). All of these types of information are advisory communication to air crews to promote aviation safety, capacity, and efficiency.

"The FAA's goal for FIS in the cockpit is to use digital data link to deliver information to the pilot, and in doing so, to improve safety, reduce costs to users and the FAA, and increase the utility, efficiency, and capacity of the NAS."¹⁰

IV. Regulatory Policies

Under the FIS Policy Statement, the FAA will assign four 25 KHz channels to one or more qualified private sector FIS providers.¹¹ The FAA has determined that these channel will be provided in the 136-137 MHz band.¹² SAMA is petitioning the FCC to amend Section 87.131, Power and emissions, to modify the "Aeronautical Advisory" Authorized Emissions classification to allow not only A3E (double sideband amplitude modulation), but also to allow F1D and G1D (frequency and phase modulated digital) in order to permit digital data transmissions for FIS on the frequencies the FAA selects to provide this service (and make such other consequent changes as are necessary).

V. Industry and FAA Support

FAA Administrator Garvey has formally adopted the FIS policy cited herein. The General Aviation Action Plan Coalition (GAAPC), the umbrella organization of all of the general aviation trade associations, requested this policy and strongly supports its expeditious implementation. SAMA is petitioning the Commission, and other general aviation trades associations will be supporting this petition, to underscore the strong industry support for the amendment needed to permit digital data transmission of FIS in this band. In addition, under the FIS Policy Statement, FAA has committed to work with industry to develop a joint petition to the Commission to assign four channels for this purpose¹³, and SAMA is working with the FAA's Spectrum Management Office to implement this program.

Avionics manufacturers have already introduced low-cost radio receivers, aimed at the low-end general aviation market, for FIS broadcasts, in anticipation of the FAA initiating this service in 1999.

¹⁰ Id.

¹¹ Id.

¹² Id.

¹³ Id.

The provision of weather information by data link has been consistently identified as one of the highest priority NAS modernization elements for general aviation safety, capacity, and efficiency.¹⁴ It is the subject of a new FAA Joint Safety Analysis Team on Weather (of which SAMA is the industry Co-Chair). This has been initiated under the FAA's Safer Skies program, the goal of which is an 80% reduction in the fatal accident rate within 10 years, because weather accidents account for the second largest type of aviation accidents in all segments of aviation (as well as being the largest cause of delays in all segments of aviation).

In addition, the RTCA Special Committee 169 (Data Link Applications) Working Group 3 (Flight Information Services), which I Co-Chair, expects to finalize standards for FIS data broadcast by the end of 1998.

This petition also supports NASA's new Aviation Weather Information (AWIN) Program, which is part of its Aviation Safety Program, a five year, \$500 Million program to improve aviation safety, with the same goal as the FAA's Safer Skies Program, an 80% reduction in the fatal accident rate within 10 years. The AWIN program was the first element of NASA's Aviation Safety Program to be implemented, and has resulted in several contract awards to government/industry teams intending to provide digital Flight Information Services. This petition will enable the FAA to provide the radio frequency spectrum necessary for the AWIN program to proceed effectively.

VI. Proposed Rules

We request such modifications of Part 87 of the Commission's Rules and Regulations as are described above and are otherwise necessary to provide for the allocation of four frequencies in the 136 - 137 MHz band for FIS using either frequency of phase modulated digital transmissions.

We understand that the FAA will be submitting comments to the Commission in support of this petition, wherein FAA will propose more specific amendments to these Parts that will accomplish this objective.

VII. Conclusion

This petition supports the FAA Administrator's Airborne Flight Information Services Policy Statement signed on May 1, 1998. It supports the request made by the General Aviation Action Plan Coalition request to the FAA of April 30,

¹⁴ Meeting Summary, NAS Modernization General Aviation Forum on NAS Architecture, March 3, 1998, general aviation opportunity to discuss NAS Architecture version 3.0. "The item with the most energy that FAA could do for GA in modernization is graphical weather in the cockpit."

1997. It supports the FAA's Safer Skies program to reduce fatal aviation accident rate by 80% within 10 years. It supports the recent Request for Information on FIS issued by the FAA to implement the FIS Policy Statement. It supports NASA's Aviation Weather Information (AWIN) program. It enables the provision of high quality, text and graphical information on weather hazards to be provided in flight to air crews in all segments of aviation, for major improvements in aviation safety, capacity, and efficiency.

This petition is supported by the FAA and general aviation trade associations.

This petition does not change the use of the frequencies in question, but merely allows advisory information including weather to be broadcast by digital data transmission in addition to by conventional voice transmission, as the emission characteristics for this band are currently specified. It uses currently unused spectrum, which has not fulfilled the purpose for which it was allocated, by allowing its use for digital FIS broadcasts. Avionics manufacturers have already introduced low cost FIS receivers in expectation of a large demand for FIS broadcasts.

The Commission's action making the proposed amendments of its rules is necessary for the FAA to proceed with its FIS program. Prompt action is required to enable the FAA to provide these services on the schedule it has announced to the public, with frequencies to be assigned by December 31, 1998.

For these reasons, SAMA is requesting favorable and expedited action on this petition, in order to allow the FAA to meet its timetable for assignment of these channels to the FIS providers it selects by December 31, 1998, for implementation of the system in 1999.

Respectfully submitted,



Paul C. Fiduccia
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September 14, 1998



U.S. Department
of Transportation

Federal Aviation
Administration

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JUN 16 1998

Mr. Paul Fiduccia
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Alexandria, VA 22302-1507

Dear Mr. Fiduccia:

The Federal Aviation Administration (FAA) is pleased to announce the release of the Airborne Flight Information Services (FIS) Policy Statement. The policy was signed by the FAA Administrator on May 1, 1998. The policy statement provides the necessary high-level guidance to the FAA and aviation community on the future direction and the roles of the FAA and industry in the provision of basic FIS services. The policy calls for government/private industry partnership in which the government provides basic weather products and access to radio spectrum to selected qualified vendors who provide FIS data link services to end users.

We look forward to working with the user community, private industry and other government agencies in the development of this FIS service.

Should you have any questions, please have your staff contact Ms. Sandra Schmidt, Aviation Weather Policy Division, at (202) 366-4437.

Ronald E. Morgan
Acting Associate Administrator
for Air Traffic Services

Enclosure

Airborne Flight Information Services Policy Statement

Flight Information Services (FIS) are defined as the noncontrol, advisory information needed by pilots to operate more safely and efficiently in the National Airspace System (NAS) and in international airspace. Flight information services include information necessary for continued safe flight and for flight planning, whether in the air or on the ground. The FAA's goal for FIS in the cockpit is to use digital data link to deliver information to the pilot, and in doing so, improve safety, reduce costs to users and the FAA, and increase the utility, efficiency, and capacity of the NAS. The timely provision of high quality, accurate, and consistent information is essential to support sound operational decisions by pilots, controllers, and dispatchers.

Initial FIS products for delivery to the cockpit include information on the status of the NAS (Notices to Airmen and Special Use Airspace) and meteorological information, both in textual as well as graphical format. This policy supports the inherent efficiency of providing certain FIS through automated data communications to complement, not replace, existing voice communications.

The FAA's objective is to ensure development and provision of services for sending FIS to aircraft via data link. In the constrained Federal budget environment under which the FAA is operating, this new service is dependent on a public/private partnership to provide affordable FIS products. The FAA will utilize private sector's FIS capabilities to the maximum extent possible to bring FIS services and products to the marketplace quickly and efficiently. Therefore, future FIS services should be multi-tiered, with certain services and products being provided by the Government and others by the private sector. The FAA will seek a mix of private and public services that provides the most reasonable combination of cost and efficiency that is beneficial to the users.

Under the framework provided by this policy statement, the roles and responsibilities of the Government, industry, and the users are as follow:

- a) FAA:
 - i) will make NAS status and existing Federal meteorological data equally accessible to all aeronautical users, including service providers;
 - ii) will work with industry to develop a joint petition to the Federal Communications Commission to assign four 25 kHz radio frequency channels in the 136.0-136.9 MHz VHF spectrum and select qualified vendor(s) on a competitive basis to be the providers of FIS services;

- iii) will work with other Government agencies, users, and industry to develop a common set of human factors guidelines and standards for the display and training associated with use of FIS products in the cockpit;
- iv) will lead and coordinate establishment of national and international standards and operational procedures for delivery of FIS via data link, ensuring interoperability between various FIS capabilities and service providers; and
- v) will conduct an investment analysis to determine the feasibility of establishing an electronic Pilot Report system in the same service volume as the uplink FIS in this policy.

b) Industry:

- i) will provide ground infrastructure (i.e., ground servers and data link transmitters) needed to get products to the aircraft as well as avionics needed to process and display products in the cockpit;
- ii) will provide basic FIS products and services to all properly equipped users at no direct cost to Government and users; and
- iii) will provide value-added products for fee based on user demand.

c) Users:

- i) will acquire avionics at their own cost;
- ii) will receive basic products at no cost; and
- iii) will pay for value-added products.

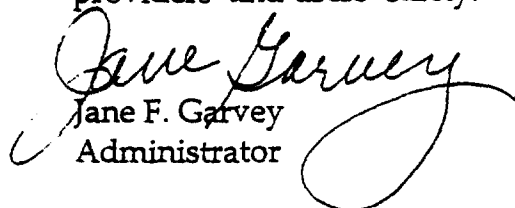
The FAA intends to use VHF Data Link (VDL) Mode 2 capability for non-time-critical data link messaging and subsequently to transition to VDL Mode 3 data and voice capability as part of a multimode data communications architecture that uses the aeronautical telecommunications network and which will support future requirements for FIS.

In the interim and consistent with this policy statement, the FAA will work with the user community and private industry to define the basic FIS products and services to be provided via data link at no cost to users or the Government. For this purpose, the FAA will allow the use of current technology radios (including those with aviation standards and those otherwise approved by the FAA under the Type Certification or Supplemental Type Certification process) to meet standards designed to satisfy the requirements of civil aviation safety services. Radio frequency spectrum allocated and protected for aeronautical safety service will be used to provide FIS data link services. In addition, spectrum engineering criteria for

FIS data link services that also ensure protection to existing and planned systems in the spectrum will be used.

The FAA recognizes it is likely that flight information may become available to aircraft through various other radio links. Those systems that do not operate within the spectrum dedicated to aviation cannot be certified by FAA for safety services.

The FAA will not enter the market in the future by providing competing tailored-to-flight FIS products without a thorough evaluation of the impact on the commercial providers' and users' safety.


Jane F. Garvey
Administrator

Date MAY 1 1998